

Docket No. 214502US0PCT



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF: Rino MESSERE, et al.

SERIAL NO: 09/926,609

GAU: 1773

FILED: April 3, 2002

EXAMINER: RICKMAN, H.

FOR: TRANSPARENT GLAZING AND USE THEREOF IN A CHILLING CHAMBER DOOR COMPRISING IN PARTICULAR A GLAZING UNDER VACUUM

**INFORMATION DISCLOSURE STATEMENT UNDER 37 CFR 1.97**

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

Applicant(s) wish to disclose the following information.

**REFERENCES**

- ☒ The applicant(s) wish to make of record the references listed on the attached form PTO-1449. Copies of the listed references are attached, where required, as are either statements of relevancy or any readily available English translations of pertinent portions of any non-English language references.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

**RELATED CASES**

- ☐ Attached is a list of applicant's pending application(s), published application(s) or issued patent(s) which may be related to the present application. In accordance with the waiver of 37 CFR 1.98 dated September 21, 2004, copies of the cited pending applications are not provided. Cited published and/or issued patents, if any, are listed on the attached PTO form 1449.
- ☐ A check or credit card payment form is attached in the amount required under 37 CFR §1.17(p).

**CERTIFICATION**

- ☐ Each item of information contained in this information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this statement.
- ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the undersigned, having made reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this statement.

**DEPOSIT ACCOUNT**

- ☒ Please charge any additional fees for the papers being filed herewith and for which no check or credit card payment is enclosed herewith, or credit any overpayment to deposit account number 15-0030. A duplicate copy of this sheet is enclosed.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,  
MAIER & NEUSTADT, P.C.

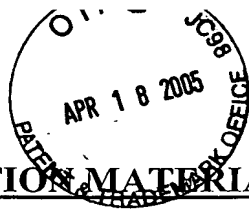
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**INFORMATION MATERIAL TO THE PATENTABILITY OF**  
**CLAIMS 90-124 OF APPLICATION SERIAL NO. 10/341,525**

**Claim 91 of Application Serial No. 10/341,525 is unpatentable as anticipated or, in the alternative, as obvious, over Funaki (U.S. 5,766,739)**

Funaki was published on June 16, 1998, and thus qualifies as prior art under 35 U.S.C. § 102(b) against U.S. Application Serial No. 10/341,525 (the '525 application).

Funaki discloses coating a mixture of blocked isocyanate and polyol on the spy glass of a refrigerator door, followed by curing. For the disclosure of the refrigerator spy glass see column 5, lines 25-26. The mixture of isocyanate and polyol in Funaki is found in the disclosed conductive paste, used in the reference to afford an anti-fogging property. See column 3, lines 27-28 and 58-63 of Funaki, which details the use of a mixture of a blocked isocyanate and a polyester containing residual hydroxyl (OH) groups (i.e., a polyol). This conductive paste is applied to, e.g., the spy glass of a refrigerator door and cured, for example at a temperature of from 80-130°C. See column 4, lines 49-50. Note also Example 1 at column 6, lines 21-35 wherein a mixture of polyol (polyester resin) and block type isocyanate is cured at 120°C for 45 minutes on a transparent polycarbonate sheet.

The disclosure of Funaki thus clearly anticipates, or at least renders obvious, a method of manufacturing a refrigerator door having a transparent substrate (i.e., a spy glass) by applying a mixture of polyol and blocked isocyanate to the spy glass and curing mixture. Claim 91 of the '525 application is thus unpatentable.

**Claims 92-108 and 116-120 are unpatentable over Funaki (U.S. 5,766,739) in view of Muhlebach (U.S. 5,210,169)**

Both Funaki and Muhlebach were published more than one year before the earliest priority date of the '525 application, and thus qualify as prior art against the '525 application under 35 U.S.C. § 102(b).

Funaki has been discussed above with regard to Claim 91 of the '525 application. Muhlebach discusses prior art blocked isocyanate compounds that may be used in the preparation of the Funaki isocyanate/polyol mixture.<sup>1</sup> In particular, Muhlebach discloses the use of hexamethylene diisocyanate at column 2, line 51 (applicable against Claim 92), 3,5-dimethylpyrazole at column 4, lines 3-4 (applicable against Claims 93 and 95), and biuret compounds at column 3, lines 2-3 (applicable against Claim 94).

As noted above with regard to Claim 91 of the '525 application, Funaki discloses curing a mixture of blocked isocyanate and polyol at 120°C for 45 minutes at column 6, lines 33-34, applicable against Claims 96, 97 and 98, and uses polyethylene glycol as a component polyol at column 3, lines 38-41 (see also column 3, lines 58-63), applicable against Claim 99. The choice of polyol molecular weight is an obvious design choice, as is the addition or non-addition of standard additives, catalyst, etc. See, for example, column 4, line 6, of Funaki which discloses the addition of silver (a metal catalyst) to the polyol/isocyanate mixture.

With regard to Claims 116-120 of the '525 application, the Funaki blocked isocyanate/polyol mixture is explicitly taught by the reference itself to afford an antifogging property (col. 3, lines 27-28), and thus inherently meets or exceeds the performance characteristic limitations of Claims 116-120. For example, Funaki and

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<sup>1</sup> Funaki discusses the general use of blocked isocyanate compounds at column 3, line 59.

Muhlebach disclose exactly the same isocyanate/polyol mixtures as those disclosed in the '525 application, cured under the same conditions on the same substrates, and thus inherently meet all the limitations of these claims.

Accordingly, the combination of Funaki and Muhlebach render Claims 92-108 and 116-120 unpatentable.

**Claims 109-112 are unpatentable over Funaki, Muhlebach and Florentin (U.S. 6,052,965).**

Funaki and Muhlebach have been discussed above. Florentin was published April 25, 2000, and thus qualifies as prior art under 35 U.S.C. § 102(b) against the '525 application.

Claim 109 of the '525 application is similar to Claim 91 thereof, but requires an additional substrate having a low-emissivity surface or a low-emissivity coating thereon.

Florentin discloses a refrigerator door (column 1, lines 10-11) having two substrates, one being a substrate having a low-emissivity surface. See column 3, lines 43-48. This common prior art structure, in combination with the coatings and particular blocked isocyanates, etc. of Funaki and Muhlebach, render Claims 109-112 of the '525 application unpatentable.

**Claims 113-115 and 121-124 are unpatentable over Funaki**

Funaki has been discussed above, and applies equally against Claim 113 of the '525 application and claims dependent thereon. Notably, Claim 113, which is similar to Claim 91, requires that the cured mixture form 1.) a hydrophobic surface having a surface tension, and 2.) a hydrophilic interior having a hydrophilicity. However, the

'525 application itself admits that polyurethane coatings like those described in Funaki<sup>2</sup> necessarily provide a hydrophobic surface and a hydrophilic interior. See paragraph [0051] of the publication corresponding to the '525 application (US 2003/0205059 A1), reproduced below (emphasis added):

[0051] In addition to the hydrophilic coatings, a wide variety of highly scratch-resistant **coatings having a hydrophobic surface and hydrophilic interior may also be used to inhibit fogging** on the substrate of the refrigerator or merchandiser. These coatings may be applied in a similar fashion as discussed above to inhibit fogging, thereby optimizing visibility for the marketing of frozen foods. **For example, polyurethane compositions may be used.** Polyurethane compositions of the present invention may be non-fogging and water repellent, and may maintain excellent abrasion resistance, clarity, and adhesive properties on most plastics and glass. A hydrophilic layer of the composition possesses a water-repellent surface due to the unique material combinations put forth in the invention. Hydrophilic and water-repellent properties are generally achieved without the addition of fog-preventing surfactants or need for chain extenders. This makes the anti-fog composition superior to other materials in anti-fog properties. **The composition system may comprise one or more of the following: an isocyanate prepolymer having reactive or blocked isocyanate groups or a blocked isocyanate, a water-soluble or water dispersible polyol, any compatible organic solvents or water (and emulsifier, if water-based), any required catalysts, and rheological additives.** The invention can be also cast in a solvent-free state in order to produce a film, or casting molding composition.

This disclosure appears in the paragraph bridging pages 13 and 14 of the specification as originally filed in the '525 application. Because hydrophobic surfaces necessarily have a surface tension, and because hydrophilic interiors necessarily have a hydrophilicity, Funaki, either alone or with Muhlebach, renders unpatentable all of Claims 113-115 and 121-124 of the '525 application by disclosing exactly the cured mixtures of polyol/blocked isocyanate described and claimed in the '525 application.

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<sup>2</sup> Polyurethanes are formed by curing mixtures of isocyanates and polyols.

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SHEET 1 OF 1

Form PTO 1449  
(Modified)

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE

ATTY DOCKET NO.  
214502US0PCT

SERIAL NO.  
09/926,609

LIST OF REFERENCES CITED BY APPLICANT

APPLICANT  
Rino MESSERE, et al.

FILING DATE  
April 3, 2002

GROUP  
1773

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE IF APPROPRIATE
	AA	6,052,965	04-25-00	Florentin et al.			
	AB	US 2004/0194388	10-07-04	Roche et al.			
	AC	5,210,169	05-11-93	Mühlebach et al.			
	AD	5,766,739	06-16-98	Funaki et al.			
	AE						
	AF						
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FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	TRANSLATION	
					YES	NO
	AO					
	AP					
	AQ					
	AR					
	AS					
	AT					
	AU					
	AV					

OTHER REFERENCES (Including Author, Title, Date, Pertinent Pages, etc.)

	AW	Information Material to the Patentability of Claims 90-124 of Application Serial No. 10/341,525				
	AX					
	AY					
	AZ					<input type="checkbox"/> Additional References sheet(s) attached

Examiner

Date Considered

\*Examiner: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.